



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/389,941	09/03/1999	THOMAS W. MEYER		6070

7590

04/09/2003

RINES AND RINES
81 NORTH STATE STREET
CONCORD, NH 03301

EXAMINER

LERNER, MARTIN

ART UNIT

PAPER NUMBER

2654

DATE MAILED: 04/09/2003

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/389,941

Applicant(s)

MEYER ET AL.

Examiner

Martin Lerner

Art Unit

2654

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3 to 20 and 22 to 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3 to 20 and 22 to 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Response to Amendment

1. The reply filed on 12 November 2002 is not fully responsive to the prior Office Action because of the following omission(s) or matter(s):

It remains unclear which claims are pending due to the informality of Amendment B filed 13 December 2001 (Paper No. 6). The amendment fails to comply with 37 CFR 1.121(c) because it does not include explicit directions to cancel claims 1, 2, and 21, nor properly amend, by bracketing and underlining, the claim dependency of claims 3, 4, 10, 11, 13, 14, 20, 22, 24, and 30. Only the body of Amendment B (Page 6) indicates claims 1, 2, and 21 have been deleted, but no express instructions to so cancel these claims are provided. To correct failure of Amendment B to comply with 37 CFR

1.121(c), Applicants should do the following:

- (1) Provide express instructions to cancel claims 1, 2, and 21.
- (2) Provide proper amendments (i.e. by bracketing and underlining) to claims 3, 4, 10, 11, 13, 14, 20, 22, 24, and 30 so as to indicate their dependency.
- (3) Provide a clean version of the entire set of pending claims, so as unambiguously to show which claims are currently pending and their present form.

Specification

The disclosure is objected to because of the following informalities:

The disclosure is objected to because it contains embedded hyperlinks and/or other forms of browser-executable code. Applicants are required to delete the embedded hyperlinks and/or other forms of browser-executable code. See MPEP § 608.01. Embedded hyperlinks are found: On page 2, third line from the bottom; on page 3, line 3; and in several places on page 20.

On page 3, line 6, the Serial Number of the U.S. Patent Application should be inserted as – 09/389,942 filed 03 September 1999 --.

On page 20, line 5, “me” should be –the--.

Appropriate correction is required.

Information Disclosure Statement

The Information Disclosure Statement filed 17 September 1999 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent.

The Specification cites numerous prior art publications to which attention is directed in this IDS (Paper No. 2), but which are not readily available and may be relevant to examination of the application. Applicants are requested to supply copies of any relevant prior art references, which are cited in the Specification and the IDS (Paper No. 2).

Claim Objections

2. Claims 3 to 20, 22 to 42 are objected to because of the following informalities:

Each of pending independent claims 7, 27, 31, 32, and 34 contains the limitation "at data rates from hundreds to thousands of kilobytes and higher". This limitation should be changed to be –at data rates from hundreds to thousands of kilobytes per second and higher." A data rate involves a time element, so just giving a number of bytes does not specify a data rate, and may be unclear to those skilled in the art. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 3 to 20, and 22 to 42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Independent claims 7, 27, 31, 32, and 34 each contain the limitation "data rates from hundreds to thousands of kilobytes and higher." This limitation is new matter because it is not disclosed in the Specification as originally filed. The Specification discloses embedding 3000 bit/second in a 128,000 bit/second file. (Specification, Pages 6 and 15) This is much less than even hundreds of kilobytes per second, as

embedding 3000 bit/second is 3 kilobits per second, which corresponds to less than one kilobyte per second (8 bits per byte).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 31 to 33, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tewfik et al.* in view of *Moskowitz et al.*

Regarding independent claims 31 and 32, *Tewfik et al.* discloses a method of embedding data, comprising:

“embedding supplemental digital data selected from the group consisting of interactive and traditional advertising, merchandising materials, e-commerce solicitations and messages, polls, video games, interactive music and audio/video programs, into a compressed digital information stream” – data hiding is the process of encoding extra information in digital data, such as video, images, or sound; hiding information in images may be used to supplement an image or sound with additional information; the hidden information itself may be text, audio or image data or hyperlinks; for example, a short audio clip may associate a train whistle with an image of a locomotive (column 1, lines 38 to 52); hiding data of an audio clip of a train whistle within an image of a locomotive is an “audio/video program”;

Art Unit: 2654

“transforming the stream into encoded sets of frequency-domain coefficient representations of said information and compressing the same” – in step 26, a discrete cosine transform (DCT) is applied to each block B_i to form a DCT block F_i , which is a frequency domain equivalent of block B_i (column 5, lines 34 to 39: Figure 3); in step 30, a bit b_i is hidden in block F_i by modifying the DCT coefficients (column 5, lines 53 to 57: Figure 3); the DCT and data hiding are coding methods for compressing the data stream;

“at selected multiple coefficients of each set to produce a supplemental data file containing such embedded data for enabling user decoding to present both the information and the embedded supplemental data” – in step 32, the original image blocks B_i are replaced by the inverse DCT's or the modified blocks F_i ; $F_i'(j,k)$ are multiple coefficients for each block of data (column 5, line 55); the method is reversible such that extraction of the embedded data from an image having embedded data is possible (column 6, lines 24 to 37).

Concerning independent claims 31 and 32, *Tewfik et al.* does not provide any express values for the number of bits embedded or the data rates. Specifically, *Tewfik et al.* omits “embedding thousands of bits of the supplemental digital data at data rates from hundreds to thousands of kilobytes and higher.” However, *Moskowitz et al.* teaches a related method of “buried data technique” for hiding an audio channel in music. *Moskowitz et al.* says per channel data insertion reaches 176.4 kilobits per second per channel or 352.8 kbps with stereo channels (“hundreds of kilobytes”) (column 9, lines 2 to 27). It would have been obvious to one of ordinary skill in the art to

perform the method of data hiding of *Tewfik et al.* at the data rate quantities suggested by *Moskowitz et al.* for the purpose of embedding audio signals in image data.

Regarding claim 33, *Tewfik et al.* discloses a bit b_i is hidden in block F_i by modifying the DCT coefficients (column 5, lines 53 to 57: Figure 3); DCT coefficients $F'_i(j,k)$ are "at regular intervals" because each group of coefficients $F'_i(j,k)$ represents a block of image data.

Regarding claim 39, *Tewfik et al.* discloses a bit b_i is hidden in block F_i by modifying the DCT coefficients (column 5, lines 53 to 57: Figure 3); clearly, the process continues to hide bits b_i in blocks F_i until all the bits are encoded.

7. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Tewfik et al.* in view of *Moskowitz et al.* as applied to claim 32 above, and further in view of *Mukherjee et al.* ("A source and channel coding approach to data hiding with application to hiding speech in video").

Tewfik et al. does not disclose how many DCT coefficients $F'_i(j,k)$ encode each block. However, *Mukherjee et al.* teaches a related method of data hiding for hiding speech in video, where data is embedded in groups of 16 luminance LL-HH coefficients. (Page 351) It would have been obvious to one of ordinary skill in the art to embed audio data as disclosed by *Tewfik et al.* in groups of 16 coefficients of image data as suggested by *Mukherjee et al.* because blocks of image data are commonly encoded by 16 coefficients.

Art Unit: 2654

Response to Arguments

8. Applicants' arguments have been considered but are moot in view of the new grounds of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure.

Manjunath et al. and Swanson et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (703) 308-9064. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Art Unit: 2654

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

me

ml
April 1, 2003

Marsha D Banks-Harold
MARSHA D. BANKS-HAROLD
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600